

SEQUENCE LISTING

<110> PhageTech Inc.

<120> INHIBITORS OF STAPHYLOCOCCUS AUREUS PRIMARY SIGMA FACTOR AND USES THEREOF

<130> SAU-R12-US37-US55

<150> US 60/445,441

<151> 2003-02-07

<160> 41

<170> PatentIn version 3.2

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<212> DNA

<213> Staphylococcus aureus

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tta aca tta gaa gat gtt aag aag caa tta att gaa aaa ggt aaa aaa
Leu Thr Leu Glu Asp Val Lys Lys Gln Leu Ile Glu Lys Gly Lys Lys
20 25 30

96

gag ggt cat tta agt cat gaa gaa att gct gaa aaa ctt cag aat ttt
Glu Gly His Leu Ser His Glu Glu Ile Ala Glu Lys Leu Gln Asn Phe
35 40 45

144

gat atc gac tct gat caa atg gat gat ttc ttt gat caa tta aat gat
Asp Ile Asp Ser Asp Gln Met Asp Asp Phe Phe Asp Gln Leu Asn Asp
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192

aat gat att tca cta gtt aat gaa aaa gat agt tca gat act gac gag
Asn Asp Ile Ser Leu Val Asn Glu Lys Asp Ser Ser Asp Thr Asp Glu
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240

aaa ctg aat cca agt gat ctt agt gcc cct cca ggt gtt aaa ata aat		288	
Lys Leu Asn Pro Ser Asp Leu Ser Ala Pro Pro Gly Val Lys Ile Asn			
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gac cca gtt cgt atg tac ctt aaa gaa att ggg cgt gtt aac tta tta		336	
Asp Pro Val Arg Met Tyr Leu Lys Glu Ile Gly Arg Val Asn Leu Leu			
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agt gca caa gaa gaa atc gaa tta gcc aaa cgt att gaa caa ggt gat		384	
Ser Ala Gln Glu Glu Ile Glu Leu Ala Lys Arg Ile Glu Gln Gly Asp			
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gaa gta gca aaa tca aga ctt gca gaa gcg aac tta cgt tta gtt gta		432	
Glu Val Ala Lys Ser Arg Leu Ala Glu Ala Asn Leu Arg Leu Val Val			
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agt att gct aaa aga tac gta ggt cgt ggt atg tta ttc ctt gat tta		480	
Ser Ile Ala Lys Arg Tyr Val Gly Arg Gly Met Leu Phe Leu Asp Leu			
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atc caa gaa ggt aat atg ggt ctt att aaa gct gtt gaa aaa ttt gac		528	
Ile Gln Glu Gly Asn Met Gly Leu Ile Lys Ala Val Glu Lys Phe Asp			
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ttt aac aaa gga ttt aag ttt tca aca tat gca aca tgg tgg att aga		576	
Phe Asn Lys Gly Phe Lys Phe Ser Thr Tyr Ala Thr Trp Trp Ile Arg			
180	185	190	
caa gca atc act cgt gca att gct gac caa gca cgt acg att cgt atc		624	
Gln Ala Ile Thr Arg Ala Ile Ala Asp Gln Ala Arg Thr Ile Arg Ile			
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cct gtg cat atg gta gaa aca att aat aaa tta att cgt gtt caa cgt		672	
Pro Val His Met Val Glu Thr Ile Asn Lys Leu Ile Arg Val Gln Arg			
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caa tta tta cag gac tta ggt cga gat cca gca cca gaa gaa att ggt		720	
Gln Leu Leu Gln Asp Leu Gly Arg Asp Pro Ala Pro Glu Glu Ile Gly			
225	230	235	240
gaa gaa atg gat tta cca gca gaa aaa gtt cgt gaa att tta aaa att		768	
Glu Glu Met Asp Leu Pro Ala Glu Lys Val Arg Glu Ile Leu Lys Ile			
245	250	255	
gcg caa gaa cct gtt tca tta gaa aca cca att ggt gaa gaa gat gat		816	

Ala Gln Glu Pro Val Ser Leu Glu Thr Pro Ile Gly Glu Glu Asp Asp			
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agt cat tta gga gac ttt att gag gat cag gaa gca caa agt cct tca			864
Ser His Leu Gly Asp Phe Ile Glu Asp Gln Glu Ala Gln Ser Pro Ser			
275	280	285	
gat cat gct gct tat gaa tta tta aaa gag caa tta gaa gat gtg ctt			912
Asp His Ala Ala Tyr Glu Leu Leu Lys Glu Gln Leu Glu Asp Val Leu			
290	295	300	
gat aca tta act gat aga gaa gaa aat gta tta cga tta aga ttt ggt			960
Asp Thr Leu Thr Asp Arg Glu Glu Asn Val Leu Arg Leu Arg Phe Gly			
305	310	315	320
ctt gat gac ggc aga aca aga aca ctt gaa gaa gtt ggt aaa gtt ttc			1008
Leu Asp Asp Gly Arg Thr Arg Thr Leu Glu Glu Val Gly Lys Val Phe			
325	330	335	
ggt gtt aca cgt gaa cgt att cga caa att gaa gca aaa gca ctt aga			1056
Gly Val Thr Arg Glu Arg Ile Arg Gln Ile Glu Ala Lys Ala Leu Arg			
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Glu Gly His Leu Ser His Glu Glu Ile Ala Glu Lys Leu Gln Asn Phe

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40

45

Asp Ile Asp Ser Asp Gln Met Asp Asp Phe Phe Asp Gln Leu Asn Asp
50 55 60

Asn Asp Ile Ser Leu Val Asn Glu Lys Asp Ser Ser Asp Thr Asp Glu
65 70 75 80

Lys Leu Asn Pro Ser Asp Leu Ser Ala Pro Pro Gly Val Lys Ile Asn
85 90 95

Asp Pro Val Arg Met Tyr Leu Lys Glu Ile Gly Arg Val Asn Leu Leu
100 105 110

Ser Ala Gln Glu Glu Ile Glu Leu Ala Lys Arg Ile Glu Gln Gly Asp
115 120 125

Glu Val Ala Lys Ser Arg Leu Ala Glu Ala Asn Leu Arg Leu Val Val
130 135 140

Ser Ile Ala Lys Arg Tyr Val Gly Arg Gly Met Leu Phe Leu Asp Leu
145 150 155 160

Ile Gln Glu Gly Asn Met Gly Leu Ile Lys Ala Val Glu Lys Phe Asp
165 170 175

Phe Asn Lys Gly Phe Lys Phe Ser Thr Tyr Ala Thr Trp Trp Ile Arg
180 185 190

Gln Ala Ile Thr Arg Ala Ile Ala Asp Gln Ala Arg Thr Ile Arg Ile
195 200 205

Pro Val His Met Val Glu Thr Ile Asn Lys Leu Ile Arg Val Gln Arg
210 215 220

Gln Leu Leu Gln Asp Leu Gly Arg Asp Pro Ala Pro Glu Glu Ile Gly
225 230 235 240

Glu Glu Met Asp Leu Pro Ala Glu Lys Val Arg Glu Ile Leu Lys Ile
245 250 255

Ala Gln Glu Pro Val Ser Leu Glu Thr Pro Ile Gly Glu Glu Asp Asp
260 265 270

Ser His Leu Gly Asp Phe Ile Glu Asp Gln Glu Ala Gln Ser Pro Ser
275 280 285

Asp His Ala Ala Tyr Glu Leu Leu Lys Glu Gln Leu Glu Asp Val Leu
290 295 300

Asp Thr Leu Thr Asp Arg Glu Glu Asn Val Leu Arg Leu Arg Phe Gly
305 310 315 320

Leu Asp Asp Gly Arg Thr Arg Thr Leu Glu Glu Val Gly Lys Val Phe
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Gly Val Thr Arg Glu Arg Ile Arg Gln Ile Glu Ala Lys Ala Leu Arg
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35 40 45

Phe Asp Phe Asn Lys Gly Phe Lys Phe Ser Thr Tyr Ala Thr Trp Trp
50 55 60

Ile Arg Gln Ala Ile Thr Arg Ala Ile Ala Asp Gln Ala Arg Thr Ile
65 70 75 80

Arg Ile Pro Val His Met Val Glu Thr Ile Asn Lys Leu Ile Arg Val
85 90 95

Gln Arg Gln Leu Leu Gln Asp Leu Gly Arg Asp Pro Ala Pro Glu Glu
100 105 110

Ile Gly Glu Glu Met Asp Leu Pro Ala Glu Lys Val Arg Glu Ile Leu
115 120 125

Lys Ile Ala Gln Glu Pro Val Ser Leu Glu Thr Pro Ile Gly Glu Glu
130 135 140

Asp Asp Ser His Leu Gly Asp Phe Ile Glu Asp Gln Glu Ala Gln Ser
145 150 155 160

Pro Ser Asp His Ala Ala Tyr Glu Leu Leu Lys Glu Gln Leu Glu Asp
165 170 175

Val Leu Asp Thr Leu Thr Asp Arg Glu Glu Asn Val Leu Arg Leu Arg
180 185 190

Phe Gly Leu Asp Asp Gly Arg Thr Arg Thr Leu Glu Glu Val Gly Lys
195 200 205

Val Phe Gly Val Thr Arg Glu Arg Ile Arg Gln Ile Glu Ala Lys Ala
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Met Asp

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Thr Arg Thr Leu Glu Glu Val Gly Lys Val Phe Gly Val Thr Arg Glu
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Thr Arg Thr Leu Glu Glu Val Gly Lys Val Phe Gly Val Thr Arg Glu
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cat cgt aat aag gag cac aaa aca ata gat aat gta cca act gct aac 96
His Arg Asn Lys Glu His Lys Thr Ile Asp Asn Val Pro Thr Ala Asn
20 25 30

tta gtt gat tgg tac cct cta agt aat gct tat gag tac aag tta agt 144
Leu Val Asp Trp Tyr Pro Leu Ser Asn Ala Tyr Glu Tyr Lys Leu Ser
35 40 45

aga aac ggg gaa tac tta gaa tta aaa aga tta cgt tct act tta cct			192
Arg Asn Gly Glu Tyr Leu Glu Leu Lys Arg Leu Arg Ser Thr Leu Pro			
50	55	60	
tca tct tat ggt tta gat gat aat aac caa gat att att aga gat aat			240
Ser Ser Tyr Gly Leu Asp Asp Asn Asn Gln Asp Ile Ile Arg Asp Asn			
65	70	75	80
aac cat aga tgt aaa ata ggt tat tgg tac aac cct gca gta cgc aaa			288
Asn His Arg Cys Lys Ile Gly Tyr Trp Tyr Asn Pro Ala Val Arg Lys			
85	90	95	
gat aat tta aag att ata gag aaa gct aaa caa tat gga tta cct att			336
Asp Asn Leu Lys Ile Ile Glu Lys Ala Lys Gln Tyr Gly Leu Pro Ile			
100	105	110	
ata aca gaa gaa tat gat gct aat act gta gag caa gga ttt aga gat			384
Ile Thr Glu Glu Tyr Asp Ala Asn Thr Val Glu Gln Gly Phe Arg Asp			
115	120	125	
att gga gtt ata ttc caa agt ctt aaa act att gtt gtt act aga tac			432
Ile Gly Val Ile Phe Gln Ser Leu Lys Thr Ile Val Val Thr Arg Tyr			
130	135	140	
cta gaa ggt aaa aca gaa gaa tta aga ata ttt aac atg aaa tca			480
Leu Glu Gly Lys Thr Glu Glu Leu Arg Ile Phe Asn Met Lys Ser			
145	150	155	160
gaa gag tca caa ctg aat gaa gca ctt aaa gag agt gat ttt tct gta			528
Glu Glu Ser Gln Leu Asn Glu Ala Leu Lys Glu Ser Asp Phe Ser Val			
165	170	175	
gat tta act tat agt gac tta gga caa att tat aat atg ttg tta tta			576
Asp Leu Thr Tyr Ser Asp Leu Gly Gln Ile Tyr Asn Met Leu Leu Leu			
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35 40 45

Arg Asn Gly Glu Tyr Leu Glu Leu Lys Arg Leu Arg Ser Thr Leu Pro
50 55 60

Ser Ser Tyr Gly Leu Asp Asp Asn Asn Gln Asp Ile Ile Arg Asp Asn
65 70 75 80

Asn His Arg Cys Lys Ile Gly Tyr Trp Tyr Asn Pro Ala Val Arg Lys
85 90 95

Asp Asn Leu Lys Ile Ile Glu Lys Ala Lys Gln Tyr Gly Leu Pro Ile
100 105 110

Ile Thr Glu Glu Tyr Asp Ala Asn Thr Val Glu Gln Gly Phe Arg Asp
115 120 125

Ile Gly Val Ile Phe Gln Ser Leu Lys Thr Ile Val Val Thr Arg Tyr
130 135 140

Leu Glu Gly Lys Thr Glu Glu Glu Leu Arg Ile Phe Asn Met Lys Ser
145 150 155 160

Glu Glu Ser Gln Leu Asn Glu Ala Leu Lys Glu Ser Asp Phe Ser Val
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Asp Leu Thr Tyr Ser Asp Leu Gly Gln Ile Tyr Asn Met Leu Leu Leu
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Met Lys Lys Ile Ser Lys
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His Arg Cys Lys Ile Gly Tyr Trp Tyr Asn Pro Ala Val Arg Lys Asp
35 40 45

Asn Leu Lys Ile Ile Glu Lys Ala Lys Gln Tyr Gly Leu Pro Ile Ile
50 55 60

Thr Glu Glu Tyr Asp Ala Asn Thr Val Glu Gln Gly Phe Arg Asp Ile
65 70 75 80

Gly Val Ile Phe Gln Ser Leu Lys Thr Ile Val Val Thr Arg Tyr Leu
85 90 95

Glu Gly Lys Thr Glu Glu Glu Leu Arg Ile Phe Asn Met Lys Ser Glu
100 105 110

Glu Ser Gln Leu Asn Glu Ala Leu Lys Glu Ser Asp Phe Ser Val Asp
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aat tct atg ggt gta act aag tta gac gta ccc tta agt aac ata cat 96
Asn Ser Met Gly Val Thr Lys Leu Asp Val Pro Leu Ser Asn Ile His
20 25 30

gaa tgg tat cct ttt tct aac gct tat tct tac aag tat aat gta aaa 144
Glu Trp Tyr Pro Phe Ser Asn Ala Tyr Ser Tyr Lys Tyr Asn Val Lys
35 40 45

aca aaa gat tta gta tta aaa cga cta cgt tca tca cta cca gta tct 192
Thr Lys Asp Leu Val Leu Lys Arg Leu Arg Ser Ser Leu Pro Val Ser
50 55 60

tat ggg att gaa cga gcg tct aaa gag tat gac aaa gat aaa gta tgt 240
Tyr Gly Ile Glu Arg Ala Ser Lys Glu Tyr Asp Lys Asp Lys Val Cys
65 70 75 80

aac aca gta aca tgg ata aac cat tca gta aaa gac agt aat tta cac 288
Asn Thr Val Thr Trp Ile Asn His Ser Val Lys Asp Ser Asn Leu His
85 90 95

att att aat aaa gct aaa tca tat ggg tta cct gtt att aca gaa aag 336

Ile Ile Asn Lys Ala Lys Ser Tyr Gly Leu Pro Val Ile Thr Glu Lys			
100	105	110	
tat aca tat gaa gat gtg gat tat ggg ttt gca cag tta aat gtt atc			384
Tyr Thr Tyr Glu Asp Val Asp Tyr Gly Phe Ala Gln Leu Asn Val Ile			
115	120	125	
ttt tct gaa tta aaa tct ttg att att aat cgt tat tta gag gat aaa			432
Phe Ser Glu Leu Lys Ser Leu Ile Ile Asn Arg Tyr Leu Glu Asp Lys			
130	135	140	
gat ggt agt ttt att gtt aag ttt aaa aga cac aac cca gaa acc caa			480
Asp Gly Ser Phe Ile Val Lys Phe Lys Arg His Asn Pro Glu Thr Gln			
145	150	155	160
tat cat tta gcg gta caa gat gct gat gag gtt att aat aat acc tat			528
Tyr His Leu Ala Val Gln Asp Ala Asp Glu Val Ile Asn Asn Thr Tyr			
165	170	175	
gat gag cta ggt caa atg tat aaa atg tta tta cta atg aag aaa tta			576
Asp Glu Leu Gly Gln Met Tyr Lys Met Leu Leu Leu Met Lys Lys Leu			
180	185	190	
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Ser Lys Tyr			
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Glu Trp Tyr Pro Phe Ser Asn Ala Tyr Ser Tyr Lys Tyr Asn Val Lys			
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Thr Lys Asp Leu Val Leu Lys Arg Leu Arg Ser Ser Leu Pro Val Ser
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Tyr Gly Ile Glu Arg Ala Ser Lys Glu Tyr Asp Lys Asp Lys Val Cys
65 70 75 80

Asn Thr Val Thr Trp Ile Asn His Ser Val Lys Asp Ser Asn Leu His
85 90 95

Ile Ile Asn Lys Ala Lys Ser Tyr Gly Leu Pro Val Ile Thr Glu Lys
100 105 110

Tyr Thr Tyr Glu Asp Val Asp Tyr Gly Phe Ala Gln Leu Asn Val Ile
115 120 125

Phe Ser Glu Leu Lys Ser Leu Ile Ile Asn Arg Tyr Leu Glu Asp Lys
130 135 140

Asp Gly Ser Phe Ile Val Lys Phe Lys Arg His Asn Pro Glu Thr Gln
145 150 155 160

Tyr His Leu Ala Val Gln Asp Ala Asp Glu Val Ile Asn Asn Thr Tyr
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Ser Lys Tyr
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Xaa Xaa Xaa Leu Xaa Leu Lys Arg Leu Arg Ser Xaa Leu Pro Xaa Ser
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Tyr Gly Xaa Xaa Xaa Xaa Xaa Xaa Xaa Asp Xaa Xaa Xaa Cys
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Ile Ile Xaa Lys Ala Lys Xaa Tyr Gly Leu Pro Xaa Ile Thr Glu Xaa
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Tyr Xaa Xaa Xaa Xaa Val Xaa Xaa Gly Phe Xaa Xaa Xaa Xaa Val Ile
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